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Publication date:
2012

Document Version
Publisher's PDF, also known as Version of record

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Citation (APA):
Rangelova, D. Y., Nielsen, J., Strandbygaard, B., Blome, S., & Uttenthal, Å. (2012). *The efficacy of CP7_E2alf: an animal study involving piglets from C–strain vaccinated sows*. Abstract from Annual Meeting of the National Reference Laboratories of CSF, Hannover, Germany.

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The efficacy of CP7_E2alf: an animal study involving piglets from C–strain vaccinated sows

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Outbreaks of Classical Swine Fever (CSF) in the European Union have caused enormous economical losses. To facilitate the possibility of free trade with pigs and their products, a chimeric live DIVA vaccine CP7_E2alf was developed. Most likely, passive immunity against CSF virus in populations previously vaccinated with C-strain interferes with the efficacy of CP7_E2alf vaccination. To study the interaction with maternal antibodies, the efficacy of CP7_E2alf in piglets from C-strain vaccinated sows was examined. At 5 or at 8 weeks of age, piglets were vaccinated with CP7_E2alf. The vaccinated piglets together with mock-vaccinated littermate controls were challenged 2 weeks post vaccination with highly virulent CSFV Kozlov. The results showed that CP7_E2alf is effective in preventing mortality, severe clinical signs and pathological lesions in piglets vaccinated at 5 or at 8 weeks of age. Interestingly, the antibodies in the mock-vaccinated control piglets partly neutralized the challenge virus. In earlier studies CSFV Koslov has resulted in 100% mortality in naïve piglets, in this study mortality was reduced to 30% in the piglets infected at 7 weeks of age and to 50% in the piglets infected at 10 weeks of age. In the present study optimal time point for vaccination of piglets with passive immunity was found to be 5 weeks of age.

Acknowledgement: This study is funded from the European Community's Seventh Framework (FP7/2007-2013) under grant agreement n°227003 CP-FP (CSFV_goDIVA).